AMENDMENTS TO THE SPECIFICATION

Please replace the title with the following title rewritten in amendment format:

METHOD FOR DYNAMIC ALLOCATION OF SLOT BANDWIDTH ON ~~AN ECHANGE~~A SWITCH

Please replace Paragraph [0002] with the following paragraph rewritten in amendment format:

[0002] The present invention relates to telecommunication field, and more particularly to a dynamic allocation method for bandwidth of slot on ~~an exchange~~a switch.

Please replace Paragraph [0003] with the following paragraph rewritten in amendment format:

[0003] In ~~an exchange~~a switch design, sometimes slot structure is used. In the past design, the number of slots and the line flow from a slot to the main ~~exchange~~ switch board are fixed. In this way, flexibility of bandwidth allocation is limited at the hardware. For example, if a broad bandwidth slot is plugged with a service processing board that has lower requirement of data bandwidth, then bandwidth resource is wasted.

Please replace Paragraph [0004] with the following paragraph rewritten in amendment format:

[0004] Fig. 1 shows a slot diagram of ~~an exchange~~a switch. There are four slots in total, and each slot is designed with upstream bandwidth 8G. Therefore, each of the four slots can be respectively plugged in a service processing board with upstream bandwidth 8G, for example this service processing board supports 8 gigabit Ethernet. If a Ethernet process board with 3G upstream bandwidth is intended to be plugged in one of the slots, for example this board supports thirty 100M Ethernet, the bandwidth of this slot is wasted. In this case only 3G upstream bandwidth is used, however another 5G upstream bandwidth is wasted.

Please replace Paragraph [0005] with the following paragraph rewritten in amendment format:

[0005] If using two slots having 4G upstream bandwidth substitutes as one slot of the original four slots with 8G upstream bandwidth, two 100M Ethernet process boards can be plugged in the ~~exchange~~switch. Nevertheless, there are only three slots are available for service processing board with 8G bandwidth. If a service processing board with 8G bandwidth is plugged in the slot with upstream bandwidth 4G, it will cause 50% service flow to be blocked. In some cases, this design is forbidden.

Please replace Paragraph [0006] with the following paragraph rewritten in amendment format:

[0006] Object of the invention is to overcome the present technology shortcomings that makes allocation upstream bandwidth inflexible. The invention proposes a method for dynamic allocation of slot bandwidth on ~~an exchange~~a switch. This dynamic allocation of slot bandwidth method not only can provide unblock service to a larger flow service processing board but also can allocate upstream bandwidth to more slots to support multiple lower flow service processing boards to avoid bandwidth waste.

Please replace Paragraph [0007] with the following paragraph rewritten in amendment format:

[0007] The method for dynamic allocation of slot bandwidth on ~~an exchange~~a switch comprises the following steps:

~~(1) setting the number of slots for a dynamic allocation bandwidth being *N*, and the bandwidth need to be dynamically allocated being *B*;~~

~~(2) defining a minimum allocation bandwidth unit being ΔB, according to practical requirement;~~

~~(3)~~ setting $B/\Delta B$ pieces of *N*-selected-one devices, and the input bandwidth of the *N*-selected-one device being $N^*\Delta B$; wherein *N* denotes the number of slots for dynamic bandwidth allocation, *B* denotes bandwidth need to be dynamically allocated; and ΔB denotes a minimum allocated bandwidth unit;

~~(4)~~ connecting each slot with one input of each *N*-selected-one device, and connecting all output of the *N*-selected-one devices with a main ~~exchange model~~switch module;

~~(5)~~ controlling the *N*-selected-one device being gated to allocate the bandwidth to slot.

Please add the following paragraph:

[0007.1] According to an embodiment of the present invention, an apparatus for dynamic allocation of slot bandwidth includes:

N slots, wherein *N* denotes the number of slots for dynamic bandwidth allocation;

$B/\Delta B$ pieces of *N*-selected-one devices, input bandwidth of every *N*-selected-one device being $N*\Delta B$; wherein *B* denotes bandwidth need to be dynamically allocated; and ΔB denotes a minimum allocated bandwidth unit; *N* inputs of each *N*-selected-one device are connected with the *N* slots respectively, and an output of each *N*-selected-one device is connected with a main switch module;

the main switch module, arranged to control the *N*-selected-one devices being gated to allocate the bandwidth to gated slot.

According to another embodiment of the present invention, an apparatus for dynamic allocation of slot bandwidth includes:

two slots;

$B/\Delta B$ pieces of two-selected-one devices, input bandwidth of every two-selected-one device being $2*\Delta B$; wherein *B* denotes bandwidth need to be dynamically allocated;

and ΔB denotes a minimum allocated bandwidth unit; two inputs of each two-selected-one device are connected with the two slots respectively, and an output of each two-selected-one device is connected with a main switch module;

the main switch module, arranged to control the two-selected-one devices being gated to allocate the bandwidth to gated slot.

Please replace Paragraph [0009] with the following paragraph rewritten in amendment format:

[0009] The method for dynamic allocation of slot bandwidth on ~~an exchange~~a switch, proposed by the invention, allocates the bandwidth to several slots, and each slot has less bandwidth. The advantage is more service processing boards with small flow can be plugged-in, or when a block happens, more service ports can be provided. By this method the bandwidth from slot to the main ~~exchange~~ switch board can be dynamically configured, i.e., the upstream bandwidth allocated to each slot is flexible. This high efficiency allocation provides service ports configuration as flexible as possible to make full use of upstream bandwidth.

Please replace Paragraph [0010] with the following paragraph rewritten in amendment format:

[0010] Further areas of applicability of the present invention will become apparent from the detailed description provided hereinafter. It should be understood that the detailed description and specific examples, while indicating the preferred

embodiment of the invention, are intended for purposes of illustration only and are not intended to limit the scope of the invention.

Please replace Paragraph [0015] with the following paragraph rewritten in amendment format:

[0015] Principle of the invention, a dynamic upstream bandwidth allocation method for slots on ~~an exchange~~a switch, is shown on Fig. 2. Suppose there are *N* slots for dynamic allocation of upstream bandwidth, and the available upstream bandwidth is *B*. The minimum upstream bandwidth unit for allocating is ΔB. On the main ~~exchange~~ switch board, $B/\Delta B$ pieces of *N*-selected-one device are set. Input bandwidth of every *N*-selected-one device is $N^*\Delta B$, i.e., a ΔB bandwidth is allocated to every input of the *N*-selected-one device. Each of the *N* slots is connected to all *N*-selected-one devices of the main ~~exchange~~ switch board, i.e., each slot is connected with one input of each *N*-selected-one device, and all output of the *N*-selected-one devices is connected with a main ~~exchange model~~switch module. There is a programmable logic chip controlled by CPU on the main ~~exchange~~ switch board. The programmable logic chip outputs strobe signals to control the *N*-selected-one device, and to allocate bandwidth to the slot according to requirement.

Please replace Paragraph [0017] with the following paragraph rewritten in amendment format:

[0017] An embodiment of the invention is as follows. Suppose there are two slots for dynamic allocation, and the upstream bandwidth to be allocated is 4G, i.e., B = 4G. The minimum unit of allocated upstream bandwidth is ΔB = 2G. Two-selected-one device can be used on the main ~~exchange~~ switch board, and the number of the devices is $B/\Delta B$ = 4/2 = 2. Therefore, two two-selected-one devices are used, and every input bandwidth of the devices is 2G. Consequently, upstream bandwidth 4G can be flexibly allocated between these two slots. In this embodiment, the two-selected-one device is type VSC713YB, made by VITESSE Company, which is a 1.25GHz Ethernet signal driver, and the logic control chip is an EPLD programmable logic chip with type EPM7256AEQ208-10, made by ALTERA Company.